



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/782,298	02/19/2004	Neal F. Gunderson	STL11283.1	4282

7590 01/28/2005

Fellers Snider Blankenship Bailey & Trippens PC
Bank One Tower
100 North Broadway Suite 1700
Oklahoma City, OK 73102-8820

EXAMINER

LETSCHER, GEORGE J

ART UNIT	PAPER NUMBER
----------	--------------

2653

DATE MAILED: 01/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/782,298

Applicant(s)

GUNDERSON ET AL.

Examiner

George J. Letscher

Art Unit

2653

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 November 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6, 8-17 and 19-26 is/are rejected.
- 7) ☒ Claim(s) 5, 7 and 18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Claim Objections

1. Claims 22 and 24 are objected to because of the following informalities:
in line 1 for each claim, the phrase "said atmosphere" should be --an
atmosphere in the interior environment-- for consistency. Appropriate
correction is required.

2. The numbering of claims is not in accordance with 37 CFR 1.126 which
requires the original numbering of the claims to be preserved throughout the
prosecution. When claims are canceled, the remaining claims must not be
renumbered. When new claims are presented, they must be numbered
consecutively beginning with the number next following the highest numbered
claims previously presented (whether entered or not).

Misnumbered claim 24 (second claim 24) should be renumbered claim
25.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for
all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or
described as set forth in section 102 of this title, if the differences between the subject
matter sought to be patented and the prior art are such that the subject matter as a whole
would have been obvious at the time the invention was made to a person having ordinary

Art Unit: 2653

skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-4, 8-9, 10-16, 19-20, 23 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lawson (US 6,078,475) in view of Tanaka et al (US 5,289,067) and Nakasugi et al (US 5,097,164).

The aforementioned claims recite the following features, inter alia, disclosed in Lawson: A hermetically sealed housing comprising opposing, substantially planar first and second housing members (24, 28) coupled together to form a hermetically sealed interior environment; an internally mounted shaft (21) having a medial portion which supports an article (16) rotatable within the interior environment, a proximal end internally supported by the first housing member, and a distal end opposite the proximal end; and means for supporting the distal end of the shaft within the interior environment. The means for supporting comprises an exterior surface on the distal end of the shaft and an interior recess (23) which extends into the second housing member a distance less than a full thickness of the second housing member, wherein the exterior surface is guided into and retained by the recess (23) when the second housing member is brought into alignment with the first housing member. The exterior surface is tapered. The means for supporting induces localized bowing of the second housing member away from the shaft. The housing is for a data storage device (11). The rotatable article comprises a rotary actuator (16), which supports a data transducing head (18) adjacent a data storage medium (14). The substantially planar first housing

Art Unit: 2653

member is formed from a first plate material and having opposing interior and exterior surfaces and a thickness therebetween and there is a substantially planar second housing member formed from a second plate material and having opposing interior and exterior surfaces and a thickness therebetween, the second housing member coupled to the first housing member with the respective interior surfaces thereof in a facing relationship to form a hermetically sealed interior environment; a rotatable article (part of 16) disposed within the interior environment. The shaft proximal-end is supported by the interior surface of the first housing member so that a continuous layer of the first material extends between the proximal end and the exterior surface of the first housing member along said axis, and the distal end supported by the interior surface of the second housing member so that a continuous layer of the second material extends between the distal end and the exterior surface of the second housing member along said axis. The first and second materials comprise metal plate. A selected one of the proximal and distal ends is tapered and is inserted into a recess in a corresponding one of the first and second housing members. The proximal end is press-fit into a recess of the housing member. See Figures 1-2 and 4 of Lawson.

Regarding claim 1, Lawson does not show the shaft being a non-rotatable shaft.

Nakasugi et al (US 5,097,164) disclose a fixed, i.e., non-rotatable, shaft (4) within a motor having a hermetical seal (2) for the first and second housing members (1,3); see Figure 1 of Nakasugi et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have furnished the hermetically sealed housing having a rotatable shaft as taught in Lawson with the rotatable shaft substituted with a non-rotatable shaft as shown in Nakasugi et al. The rationale is as follows: one of ordinary skill in the art would have been motivated to have furnished the hermetically sealed housing having a rotatable shaft as taught in Lawson with the rotatable shaft substituted with a non-rotatable shaft as shown in Nakasugi et al so that contact of the rotating sleeve with the non-rotatable shaft is avoided and seizure of the motor was avoided; see column 1, lines 55-63 of Nakasugi et al.

Regarding claims 10 and 19, Lawson does not disclose the rotatable article comprising a data storage medium (claim 10) or a rotatable article for a spindle motor (rotating the data storage medium) (claim 19). Regarding claims 6 and 17, Lawson does not show the pin affixed to the housing member and the recess extending into the end of the shaft. Lawson does disclose the pin affixed to the shaft and the recess extending into the end of the housing member.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have furnished the disk drive having a shaft pin

Art Unit: 2653

extending into a housing recess as taught by Lawson modified to the pin being affixed to the housing member and the recess extending into the end of the shaft. The rationale is as follows: one of ordinary skill in the art would have been motivated to have furnished the disk drive having a shaft pin extending into a housing recess as taught by Lawson modified to the pin being affixed to the housing member and the recess extending into the end of the shaft since one of ordinary skill in the art recognized that switching the movement interaction of two elements with each other, e.g., one element moves to the other or vice versa, merely involved a reversal of parts in the apparatus; *In re Gazda*, 219 F.2d 449, 104 USPQ 400 (CCPA 1955).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have furnished the hermetically sealed housing having an rotatable actuator as shown by Lawson with the rotatable article being the data storage medium in a spindle. The rationale is as follows: one of ordinary skill in the art would have been motivated to have furnished the hermetically sealed housing having an rotatable actuator as shown by Lawson with the rotatable article being the data storage medium since one of ordinary skill in the art readily recognized at the time the invention was made that actuator shaft/housing and spindle shaft/housing arrangements were interchangeable and were reflective of each other for their rotatable shaft/housing portions.

Art Unit: 2653

5. Claims 21-22 and 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lawson (US 6,078,475) in view of Tanaka et al (US 5,289,067) as applied to claims 1-4, 8-9, 10-16, 19-20, 23 and 26 above, and further in view of Treseder et al (US 4,556,969).

The descriptions of Lawson and Tanaka et al are in paragraph 2, supra.

Regarding claims 21 (24) and 22 (25), Lawson does not show the interior environment retaining an inert gas atmosphere (helium gas atmosphere).

Treseder et al '969 show a hermetically sealed disk file operated in a low density, inert gas atmosphere such as helium; see column 1, lines 13-21 of Treseder et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have furnished a hermetically sealed disk drive as shown in Lawson with the atmospheric gas being an inert helium gas as taught by Treseder et al. The rationale is as follows: one of ordinary skill in the art would have been motivated to have furnished a hermetically sealed disk drive as shown in Lawson with the atmospheric gas being an inert helium gas as taught by Treseder et al since the helium inert gas reduced the aerodynamic drag between the disks and their associated read/write heads by a 5 to 1 factor compared to air as well as conducting away heat; see column 1, lines 17-23 of Treseder et al.

Response to Amendment

6. Applicant's arguments with respect to claims 1, 11 and new claims 21-26 have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

7. Claims 5, 7 and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

8. Applicant's amendment and new claims necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on

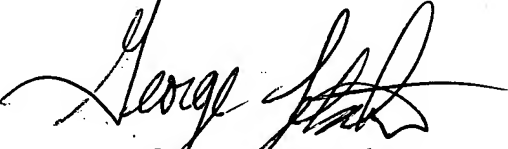
Art Unit: 2653

the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to George Letscher whose telephone number is (703) 305-7912.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-4750.

George Letscher
January 26, 2005



George Letscher
Primary Examiner
AU 2653